EUROPEAN PATENT OFFICE

R3

Patent Abstracts of Japan

PUBLICATION NUMBER : 59107229
PUBLICATION DATE : 21-06-84

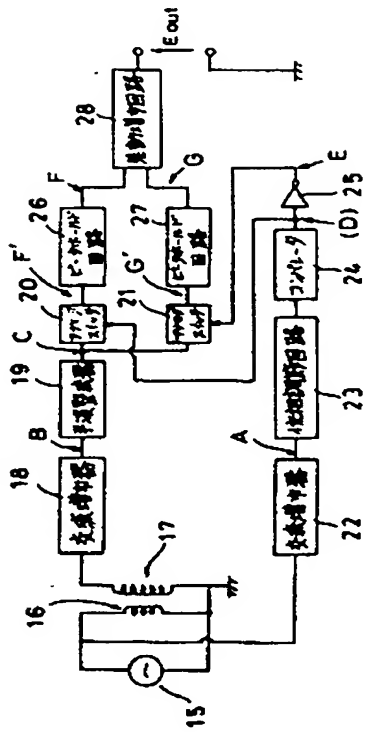
APPLICATION DATE : 11-12-82
APPLICATION NUMBER : 57217247

APPLICANT : NISSAN MOTOR CO LTD;

INVENTOR : KITA TORU;

INT.CL. : G01L 3/10

TITLE : TORQUE DETECTOR



ABSTRACT : PURPOSE: To discriminate the direction of torque, by extracting components, which has the same phase as an exciting power source or has a phase opposite to that of the exciting power source, from a voltage signal induced in a detecting coil and discriminating extracted components.

CONSTITUTION: The output of an AC power source 15 is applied to an exciting coil 16. An induced voltage of a detecting coil 17 is amplified in an amplifier 18 and is supplied to analog switches 20 and 21 through a rectifier 19. An output of an AC amplifier 22 has the phase shifted through a phase adjusting circuit 23 and is converted to a square wave D of 50% duty ratio through a zero-crossing comparator 24. An anti-phase square wave E obtained by inverting the square wave D in an inverter 25 is supplied to gates of analog switches 20 and 21. Outputs of analog switches 20 and 21 are supplied to peak holding circuits 26 and 27, and outputs F and G are calculated for difference through an operational amplifying circuit 28, thereby attaining a final output H.

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Patent Abstracts of Japan

PUBLICATION NUMBER : 05066164
PUBLICATION DATE : 19-03-93

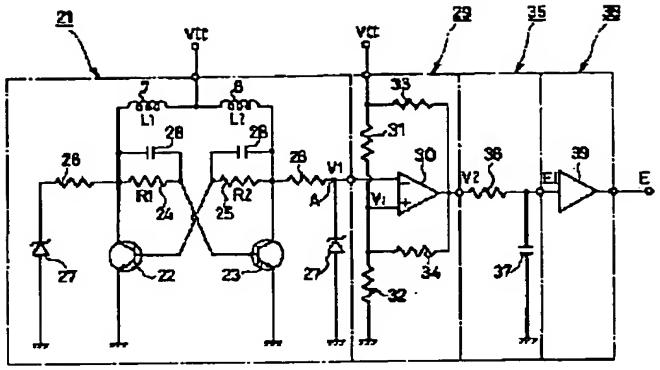
APPLICATION DATE : 05-09-91
APPLICATION NUMBER : 03254640

APPLICANT : JAPAN ELECTRON CONTROL SYST CO LTD;

INVENTOR : SENZAKI KAZUNORI;

INT.CL. : G01L 3/10

TITLE : MAGNET-STRICTION TYPE TORQUE SENSOR



ABSTRACT : PURPOSE: To detect torque applied to a magnet-striction shaft with high accuracy from a pulse duty ratio in a magnet-striction type torque sensor by using a multivibrator circuit as a detection circuit.

CONSTITUTION: An oscillating circuit 21 is formed in which the rise time and fall time of pulses are varied with changes in the self inductances L1, L2 of detecting coils 7, 8 each of which detects torque applied to a magnet-striction shaft. Since the oscillating circuit 21 is such that the self inductance L2 is decreased as the self inductance L1 increases, the pulse duty ratio is varied.

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R4

Patent Abstracts of Japan

PUBLICATION NUMBER : 2001133336
PUBLICATION DATE : 18-05-01

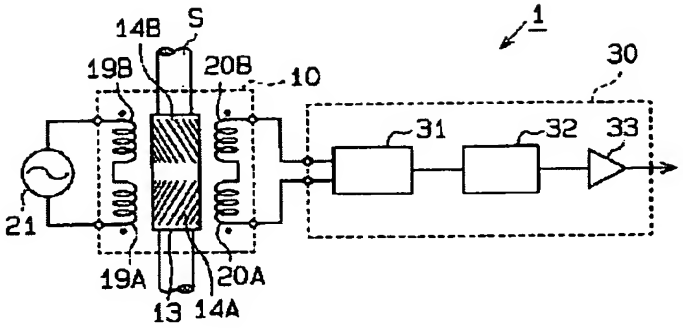
APPLICATION DATE : 08-11-99
APPLICATION NUMBER : 11316855

APPLICANT : TOYOTA AUTOM LOOM WORKS LTD;

INVENTOR : KOKETSU YOSHITAKA;

INT.CL. : G01L 3/10

TITLE : MAGNETOSTRICTIVE TORQUE DETECTOR AND MAGNETOSTRICTIVE TORQUE SENSOR



ABSTRACT : PROBLEM TO BE SOLVED: To reduce the detection error resulted from a temperature change in a signal processing unit for generating a DC detection signal from the AC output of each detecting coil.

SOLUTION: A pair of detecting coils 20A and 20B of a magnetostrictive torque sensor 10 is serially connected with reverse polarities to use both ends thereof as output ends for outputting the differential output of the AC output induced in each of the detecting coils 20A and 20B. Both the detecting coils 20A and 20B are provided with a difference in number of turns so that the magnitude of the differential AC shows a linear output characteristic in the detecting range of load torque when a load torque is added in the detecting range within a maximum detected load torque set every rotating direction to a shaft S.